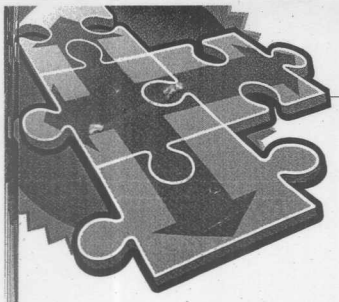

5 ways to better manage small projects

By dividing projects into stages, progress can be tracked to ensure your next control engineering project delivers on its promises.

Once a control engineering project has been identified, it's time to start planning and executing. Managing small projects involves five basic steps, based on experiences and information from the Project Management Institute, a Philadelphia-based association.

These steps are:

- Sanctioning;
- Scope definition;
- Scheduling and estimating;
- Status reporting/executing; and
- Success—closing the project.

1. Project sanctioning: To be successful, all projects need to be sponsored and supported, large or small. The project sponsor owns it and must approve its deliverables. Without formal project sanctioning, possibility of failure increases. The number-one contributor to project success, according to a recent Standish Group Report, is executive support. Customer involvement, experienced project managers, clear business objectives, and minimized scope follow closely as attributes of successful projects.

Executive support for a project is documented through a project charter. A charter sanctions the project and outlines what the sponsor expects the project to produce. It's meant to be a business document, not a technical one, and is designed to be short. Ideally, the sponsor should create it, but minimally the sponsor should sign off on it.

When project sponsors slow down long enough to create a charter, those involved are forced to think through the need and vision for a project. This process often stops many a "good idea" from being delegated as a small project and forces the sponsor to justify the project's business need. Good ideas that weren't thought through well enough litter the graveyard of abandoned projects; the instigator often moves on to the next "big idea."

2. Scope definition: The scope "statement" defines the project's:

- Business issues and impacts;
- Objectives (what the project should accomplish for the business); and
- Deliverables (including features in and out of scope).

The sponsor signs off on this document, too, and commits to it. Sponsors are responsible for and need to make decisions about the extent of the project, while project managers are responsible for planning and reporting against the plan. Caution: it's easy for a sponsor to abdicate and make project managers responsible for scope decisions, then blame them for expanding the scope and missing deadlines.

Establishing and then managing project scope is a key step in managing projects effectively. Without it, the dreaded "scope creep" will inevitably occur. For example, in running a data acquisition project for instrument testing and diagnostics, setting the scope for types of test results is critical. The scope statement spells out the results the project is expected to produce. It also helps control the "that's not what I asked for" syndrome that hits many projects.

3. Scheduling and estimating: Before starting a project, estimate how long it will take to accomplish project objectives. For small projects, take each deliverable and break it down to determine tasks needed to produce each one. The resulting list of tasks is called a work breakdown structure (WBS), which helps plan necessary work to meet project objectives. It's an essential tool for any size project. Breaking projects into smaller tasks makes it easier to esti-

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mate time needed, and it can be rolled up into an overall project estimate.

The project schedule guides workflow and comes from the WBS so that:

- Tasks will be done in the right sequence, reducing delays;
- Tasks with no dependencies can be done in parallel with other project work, shortening the schedule; and
- The longest sequence of tasks (called the "critical path") will dictate how long the project will take.

Software like Microsoft Project assists in estimating and scheduling projects and in calculating the critical path. For projects without many dependencies, simple tools like Microsoft Excel and Word can do a decent job of recording a schedule.

4. Status reporting/executing: On larger projects, 90% of a project manager's time is spent communicating. For smaller control engineering projects, communication time required obviously is much less. Whatever the project size, regular communication of project status is essential. Weekly status reports to the sponsor are best, describing:

- What has been accomplished since the last report;
- How much time and money have been spent;
- Variations from budget or schedule; and
- Any project issues that have arisen.

5. Success—closing the project: As each deliverable from the scope statement is completed and approved by the sponsor, take the opportunity to celebrate success. After all deliverables have been approved, the project can be closed. This step is important because it provides a last chance to celebrate, feel good about the accomplishment, boosts team morale, and allows a "lessons learned" session with the project team. Such a meeting recaps what went well and what could be improved for the next project. Both are valuable for capturing knowledge acquired during the project, which can be built upon in the future. The close report can include lessons learned, along with summaries of project time, cost, and variances from the budget and schedule.

It's tempting to skip the closeout step, especially when many manufacturing and engineering companies are running on tight budgets. If it's not done, though, the company loses the opportunity to record real benefits [and avoid repeating similar errors in future]. Time to formally close out an engineering project is very small compared to the overall effort. It's well worth it.

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